SEQUENCE LISTING

<110> Bayer HealthCare AG
Von Samson-Himmelstjerna, Georg
Harder, Achim
Schnieder, Thomas
Pape, Michaela

<120> DNA Coding for Beta-tubulin and its Use

<130> Mo-6878/LeA 33,759

<140> 10/030,566
<141> 2002-01-07

<150> PCT/EP00/06104
<151> 2000-06-30

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<170> PatentIn version 3.3

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aacaagaact cctcatactt cgtagagtgg attccgaaca acgtcaagac cgctgtatgc 1080

gacattccgc cgagaggact gaaaatggcc gctaccttcg ttggaaactc aactgccatc 1140

caagagctgt tcaagcgcat ttcagaacaa ttcacagcta tgttccgccg caaagcgttc 1200

ttgcattggt atactggtga aggtatggac gagatggagt tcactgaagc cgagtccaac 1260

atgaatgatc tcatctccga ataccagcaa taccaggaag ctacagctga cgatatgggc 1320

gatctcgatg cggaaggcgc tgaagaggct taccctgaag aatagacagc agattgtgtt 1380

gcgttgttcg tttctctgtg tcaatgcgaa atacacattg attgcgtt 1428

<210> 6
<211> 454
<212> PRT
<213> Cylicocyclus nassatus

<400> 6

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Lys Phe Ser Thr Ala Ile Met Arg Glu Ile Val His Val Gln Ala Gly
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Gln Cys Gly Asn Gln Ile Gly Ser Lys Phe Trp Glu Val Ile Ser Asp
            20                  25                  30

Glu His Gly Ile Lys Pro Asp Gly Thr Tyr His Gly Glu Ser Asp Leu
        35                  40                  45

Gln Leu Glu Arg Ile Asn Val Tyr Tyr Asn Glu Ala His Gly Gly Lys
    50                  55                  60

Tyr Val Pro Arg Ala Val Leu Val Asp Leu Glu Pro Gly Thr Met Asp
65                  70                  75                  80

Ser Val Arg Ser Gly Pro Tyr Gly Gln Leu Phe Arg Pro Asp Asn Tyr
                85                  90                  95

Val Phe Gly Gln Ser Gly Ala Gly Asn Asn Trp Ala Lys Gly His Tyr
            100                 105                 110

Thr Glu Gly Ala Glu Leu Val Asp Asn Val Leu Asp Val Val Arg Lys
        115                 120                 125

Glu Ala Glu Gly Cys Asp Cys Leu Gln Gly Phe Gln Leu Thr His Ser
    130                 135                 140

Leu Gly Gly Gly Thr Gly Ser Gly Met Gly Thr Leu Leu Ile Ser Lys
145                 150                 155                 160

Ile Arg Glu Glu Tyr Pro Asp Arg Ile Met Ser Ser Phe Ser Val Val
                165                 170                 175

Pro Ser Pro Lys Val Ser Asp Thr Val Val Glu Pro Tyr Asn Ala Thr
            180                 185                 190

Leu Ser Val His Gln Leu Val Glu Asn Thr Asp Glu Thr Phe Cys Ile
        195                 200                 205

Asp Asn Glu Ala Leu Tyr Asp Ile Cys Phe Arg Thr Leu Lys Leu Thr
    210                 215                 220

Asn Pro Thr Tyr Gly Asp Leu Asn His Leu Val Ser Val Thr Met Ser
225                 230                 235                 240

Gly Val Thr Thr Cys Leu Arg Phe Pro Gly Gln Leu Asn Ala Asp Leu
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245 250 255

Arg Lys Leu Ala Val Asn Met Val Pro Phe Pro Arg Leu His Phe Phe
260 265 270

Met Pro Gly Phe Ala Pro Leu Ser Ala Lys Gly Ala Gln Ala Tyr Arg
275 280 285

Ala Leu Thr Val Ala Glu Leu Thr Gln Gln Met Phe Asp Ala Lys Asn
290 295 300

Met Met Ala Ala Cys Asp Pro Arg His Gly Arg Tyr Leu Thr Val Ala
305 310 315 320

Ala Met Phe Arg Gly Arg Met Ser Met Arg Glu Val Asp Asp Gln Met
325 330 335

Met Ser Val Gln Asn Lys Asn Ser Ser Tyr Phe Val Glu Trp Ile Pro
340 345 350

Asn Asn Val Lys Thr Ala Val Cys Asp Ile Pro Pro Arg Gly Leu Lys
355 360 365

Met Ala Ala Thr Phe Val Gly Asn Ser Thr Ala Ile Gln Glu Leu Phe
370 375 380

Lys Arg Ile Ser Glu Gln Phe Thr Ala Met Phe Arg Arg Lys Ala Phe
385 390 395 400

Leu His Trp Tyr Thr Gly Glu Gly Met Asp Glu Met Glu Phe Thr Glu
405 410 415

Ala Glu Ser Asn Met Asn Asp Leu Ile Ser Glu Tyr Gln Gln Tyr Gln
420 425 430

Glu Ala Thr Ala Asp Asp Met Gly Asp Leu Asp Ala Glu Gly Ala Glu
435 440 445

Glu Ala Tyr Pro Glu Glu
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<210> 7
<211> 1429
<212> DNA
<213> Cylicocyclus nassatus

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acataccacg gagaatctga cttacaatta gaacgaatca atgtgtacta taatgaagca 180

catggaggca aatatgtccc gcgtgcagtt cttgttgatc tcgagcccgg aactatggat 240

tcggtccgtt ccgggccata cgggcaattg ttccgccctg ataactacgt gtttggacag 300

tctggcgcag gaaataactg ggcaaaaggt cactacactg aaggcgctga acttgtcgac 360

aatgtactag atgtagtgcg aaaagaagct gaaggatgtg actgtctgca gggcttccag 420

ctaactcact cacttggagg aggtaccgga tcgagtatgg gcactctcct catcttcaaa 480

attcgggagg agtatcctga tagaatcata tcctcgttct tcgttgttcc ctcaccaaag 540

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aatacagacg agactttctg tattgacaat gaagctcttt atgatatttg cttccgcact 660

ttgaaactca cgaacccaac ttatggagat ctgaatcatc ttgtgtctgt aacaatgtct 720

ggtgtcacta catgtcttcg cttccctggc caattgagtg ccgatctacg taaactagct 780

gttaacatgg ttccattccc tcgtcttcac ttctttatgc ctggctttgc tcccctctct 840

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gccatgttcc gaggacgaat gagcatgagg gaggtagacg accagatgat gtcagtgcag 1020

aacaagaact cctcatactt cgtagagtgg attccgaaca acgtcaagac cgctgtatgc 1080

gacattccgc cgagaggact gaaaatggcc gctaccttcg ttggaaactc aactgccatt 1140

caagagctgt tcaagcgcat ttcagaacaa tttacagcta tgttccgccg caaagcgttc 1200

ttgcattggt atactggtga aggtatggac gagatggagt tcactgaagc cgagtccaac 1260

atgaatgatc tcatctccga ataccaacaa taccaggaag ctaccgctga cgatatgggc 1320

gatctcgatg cggaaggcgc tgaagaggct taccctgagg aatagaacag cagattgtgt 1380

tgcgttgttc gtttctctgt gtcaatgcga aatacacatt gattgcgtt 1429

<210> 8
<211> 454
<212> PRT
<213> Cylicocyclus nassatus

<400> 8

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Gln Cys Gly Asn Gln Ile Gly Ser Lys Phe Trp Glu Val Ile Ser Asp
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Glu His Gly Ile Lys Pro Asp Gly Thr Tyr His Gly Glu Ser Asp Leu

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        35                  40                  45

Gln Leu Glu Arg Ile Asn Val Tyr Tyr Asn Glu Ala His Gly Gly Lys
    50                  55                  60

Tyr Val Pro Arg Ala Val Leu Val Asp Leu Glu Pro Gly Thr Met Asp
65                  70                  75                  80

Ser Val Arg Ser Gly Pro Tyr Gly Gln Leu Phe Arg Pro Asp Asn Tyr
                85                  90                  95

Val Phe Gly Gln Ser Gly Ala Gly Asn Asn Trp Ala Lys Gly His Tyr
            100                 105                 110

Thr Glu Gly Ala Glu Leu Val Asp Asn Val Leu Asp Val Val Arg Lys
        115                 120                 125

Glu Ala Glu Gly Cys Asp Cys Leu Gln Gly Phe Gln Leu Thr His Ser
    130                 135                 140

Leu Gly Gly Gly Thr Gly Ser Ser Met Gly Thr Leu Leu Ile Phe Lys
145                 150                 155                 160

Ile Arg Glu Glu Tyr Pro Asp Arg Ile Ile Ser Ser Phe Phe Val Val
                165                 170                 175

Pro Ser Pro Lys Val Ser Asp Thr Val Val Glu Pro Tyr Asn Ala Thr
            180                 185                 190

Leu Ser Val His Gln Leu Val Glu Asn Thr Asp Glu Thr Phe Cys Ile
        195                 200                 205

Asp Asn Glu Ala Leu Tyr Asp Ile Cys Phe Arg Thr Leu Lys Leu Thr
    210                 215                 220

Asn Pro Thr Tyr Gly Asp Leu Asn His Leu Val Ser Val Thr Met Ser
225                 230                 235                 240

Gly Val Thr Thr Cys Leu Arg Phe Pro Gly Gln Leu Ser Ala Asp Leu
                245                 250                 255

Arg Lys Leu Ala Val Asn Met Val Pro Phe Pro Arg Leu His Phe Phe
            260                 265                 270

Met Pro Gly Phe Ala Pro Leu Ser Ala Lys Gly Ala Gln Ala Tyr Arg
        275                 280                 285
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Ala Leu Thr Val Ala Glu Leu Thr Gln Gln Met Phe Asp Ala Lys Asn
290 295 300

Met Met Ala Ala Cys Asp Pro Arg His Gly Arg Tyr Leu Thr Val Ala
305 310 315 320

Ala Met Phe Arg Gly Arg Met Ser Met Arg Glu Val Asp Asp Gln Met
325 330 335

Met Ser Val Gln Asn Lys Asn Ser Ser Tyr Phe Val Glu Trp Ile Pro
340 345 350

Asn Asn Val Lys Thr Ala Val Cys Asp Ile Pro Pro Arg Gly Leu Lys
355 360 365

Met Ala Ala Thr Phe Val Gly Asn Ser Thr Ala Ile Gln Glu Leu Phe
370 375 380

Lys Arg Ile Ser Glu Gln Phe Thr Ala Met Phe Arg Arg Lys Ala Phe
385 390 395 400

Leu His Trp Tyr Thr Gly Glu Gly Met Asp Glu Met Glu Phe Thr Glu
405 410 415

Ala Glu Ser Asn Met Asn Asp Leu Ile Ser Glu Tyr Gln Gln Tyr Gln
420 425 430

Glu Ala Thr Ala Asp Asp Met Gly Asp Leu Asp Ala Glu Gly Ala Glu
435 440 445

Glu Ala Tyr Pro Glu Glu
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<212> DNA
<213> Cylicocyclus nassatus

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acataccatg gagaatctga tctacaatta gaacgaatca atgtgtacta taatgaagca 180

catggaggca agtatgtccc gcgtgcagtt cttgttgatc tcgagcccgg aactatggat 240

tcagtccgtt ctgggccata cgggcaattg ttccgccctg ataactacgt gtttggacag 300

tctggcgcag gaaataactg ggcaaaaggt cactacactg aaggcgctga acttgtcgac 360

aatgtactag atgtagtgcg aaaagaagct gaaggatgtg actgtctgca gggcttccag 420

ctaactcact cacttggagg aggtaccgga tcgggtatgg gcacactcct catctccaaa 480

attcgggagg agtatcctga tagaatcatg tcctcgttct ccgttgttcc ctcaccaaag 540

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aatacagacg agactttctg tattgacaat gaagctcttt atgatatttg cttccgcacc 660

ttgaaactca cgaacccaac ttatggagat ctgaatcatc ttgtgtctgt aacaatgtct 720

ggtgtcacta catgccttcg cttccctggc caattgaatg ccgatctacg taaactagct 780

gttaacatgg ttccattccc tcgtcttcac ttcttcatgc ctggctttgc tcccctctct 840

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aacaagaact cctcatactt cgtagagtgg attccgaaca acgtcaaaac cgctgtatgc 1080

gacattccgc cgagaggact gaaaatggcc gctaccttcg ttggaaactc aactgccatt 1140

caagagctgt tcaagcgcat ttcagaacaa ttcacagcta tgttccgccg caaagcgttc 1200

ttgcattggt atactggtga aggtatggac gagatggagt tcactgaagc cgagtccaac 1260

atgaatgatc tcatctccga ataccagcaa taccaggaag ctaccgctga cgatatgggc 1320

gatctcgatg cggaaggcgc tgaagaggct taccctgaag aatagacagc agattgtgtt 1380

gcgttgttcg tttctctgtg tcaatgcgaa atacacattg attgcgtt 1428

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Gln Cys Gly Asn Gln Ile Gly Ser Lys Phe Trp Glu Val Ile Ser Asp
20 25 30

Glu His Gly Ile Lys Pro Asp Gly Thr Tyr His Gly Glu Ser Asp Leu
35 40 45

Gln Leu Glu Arg Ile Asn Val Tyr Tyr Asn Glu Ala His Gly Gly Lys
50 55 60

Tyr Val Pro Arg Ala Val Leu Val Asp Leu Glu Pro Gly Thr Met Asp
65 70 75 80

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Ser Val Arg Ser Gly Pro Tyr Gly Gln Leu Phe Arg Pro Asp Asn Tyr
                85                  90                  95

Val Phe Gly Gln Ser Gly Ala Gly Asn Asn Trp Ala Lys Gly His Tyr
            100                 105                 110

Thr Glu Gly Ala Glu Leu Val Asp Asn Val Leu Asp Val Val Arg Lys
        115                 120                 125

Glu Ala Glu Gly Cys Asp Cys Leu Gln Gly Phe Gln Leu Thr His Ser
    130                 135                 140

Leu Gly Gly Gly Thr Gly Ser Gly Met Gly Thr Leu Leu Ile Ser Lys
145                 150                 155                 160

Ile Arg Glu Glu Tyr Pro Asp Arg Ile Met Ser Ser Phe Ser Val Val
                165                 170                 175

Pro Ser Pro Lys Val Phe Asp Thr Val Val Glu Pro Tyr Asn Ala Thr
            180                 185                 190

Leu Ser Val His Gln Leu Val Glu Asn Thr Asp Glu Thr Phe Cys Ile
        195                 200                 205

Asp Asn Glu Ala Leu Tyr Asp Ile Cys Phe Arg Thr Leu Lys Leu Thr
    210                 215                 220

Asn Pro Thr Tyr Gly Asp Leu Asn His Leu Val Ser Val Thr Met Ser
225                 230                 235                 240

Gly Val Thr Thr Cys Leu Arg Phe Pro Gly Gln Leu Asn Ala Asp Leu
                245                 250                 255

Arg Lys Leu Ala Val Asn Met Val Pro Phe Pro Arg Leu His Phe Phe
            260                 265                 270

Met Pro Gly Phe Ala Pro Leu Ser Ala Lys Gly Ala Gln Ala Tyr Arg
        275                 280                 285

Ala Leu Thr Val Ala Glu Leu Thr Gln Gln Met Phe Asp Ala Lys Asn
    290                 295                 300

Met Met Ala Ala Cys Asp Pro Arg His Gly Arg Tyr Leu Thr Val Ala
305                 310                 315                 320

Ala Met Phe Arg Gly Arg Met Ser Met Arg Glu Val Asp Asp Gln Met
                325                 330                 335
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Met Ser Val Gln Asn Lys Asn Ser Ser Tyr Phe Val Glu Trp Ile Pro
            340                 345                 350

Asn Asn Val Lys Thr Ala Val Cys Asp Ile Pro Pro Arg Gly Leu Lys
        355                 360                 365

Met Ala Ala Thr Phe Val Gly Asn Ser Thr Ala Ile Gln Glu Leu Phe
    370                 375                 380

Lys Arg Ile Ser Glu Gln Phe Thr Ala Met Phe Arg Arg Lys Ala Phe
385                 390                 395                 400

Leu His Trp Tyr Thr Gly Glu Gly Met Asp Glu Met Glu Phe Thr Glu
                405                 410                 415

Ala Glu Ser Asn Met Asn Asp Leu Ile Ser Glu Tyr Gln Gln Tyr Gln
            420                 425                 430

Glu Ala Thr Ala Asp Asp Met Gly Asp Leu Asp Ala Glu Gly Ala Glu
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Glu Ala Tyr Pro Glu Glu
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<212> DNA
<213> Cylicocyclus nassatus

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dagtrryttt ttycgytgyy ratgttgcat yrtgttgcga taaascyraa aawtcawwag 180

rcgaggctgt aaaagsactt ytacttttra atmcrytgta gcagcatgag tcatcrgcat 240

gtttgcagtg sgttttttat gcgcwgawcc yctcagaaga tgagaatgcg wtccaytgag 300

cwtagartct grctttctct cgttawctaa ratcaamtta carcrytyca ttttkcagtt 360

ytgggaagtg atctctgacg agcacggcat taagccygay ggcacatacc ayggagaatc 420

tgatytacaa ttagaacgaa tcaatgtgta ctataatgaa gcacatggtt agtcgtayat 480

ccgcttcgtt gtytcccmat gcagrccyct tcagttttta taactgycga aatatcgatc 540

gggctctttt gcagcggccw ygattacgca ataccayygc ygcygcagtg gcrgtcgaaa 600

ttaatgtggt caracgtgaa aatgtggtgc tttyaggagg caartatgtc ccgcgtgcag 660

ttcttgttga tctcgagccc ggaactatgg attcggtccg ytccgggcca tacgggcaat 720

tgttccgccc tgataactac gtgtttggac agtctggcgc aggaaataac tgggcaaaag 780

gtcactacac tgaaggygct gaacttgtcg acaatgtact agatgtagtg cgaaaagaag 840

ctgaaggatg tgactgtctg caggtaaatt tccaagtagt agcaggaaat ggtwtgtgra 900

tagcataaca aaagtcatag aaggaatatg gacgctagtc aaaacaaagw tggacgttar 960

tcggtcgtcc gggacarttt ggaagtcatg ggtcasccaa cacgcttttt tamaagtaca 1020

tcatactctt ttcccacgaa aagctatttt gcgtattacg gggtacaggg gaggggtcaa 1080

aatcacagat tgctgaaaty tggttcactg ragttattgr tgaaaatcat attgattttg 1140

cttgctactg ccttcttttr aggctatgct ttacaatctt ggggcctgga taaccgaatt 1200

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tttcgcagca tatggcaatc tytccacttc tgacaagttt tcygtagaaa atatwcttca 1320

aggtstcaag aacyttgctg ctagrgctgt aaaccaayct gtatcycttt cagggcttcc 1380

agctaactca ctcacttgga ggaggtaccg gatcgggtat gggcactctc ctcatctcca 1440

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cyytgaaact cacsaaccca acttatggag atctgaatca tcttggtrrg yrayatkcsa 1680

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ttgcgaygtt gcagctatgt tccgccgcaa agcgttyttg catyggtaya ctggwgaagg 2400

tatggaygag atggagttca ctgaagccga gtccaacatg aatgatctca tctccgaata 2460

ccarcaatac caggttcggc tgtytttcwt rgayactgtr tttaataatt wttyttgtct 2520

aggaagctac cgctgacgat atgggcgatc tcgatgcgga aggcgctgaa gaggcttacc 2580

ctgargaata gamcagcaga ytgtgttgcg ttgttcgttt ctctrtgtca atgcgaaata 2640

cacattgatt gcgtt 2655

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<213> Artificial

<220>
<223> Hybridization probe/primer

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<210> 13
<211> 20
<212> DNA
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<220>

<223> Hybridization probe/primer

<400> 13
ggccacgcgt cgactagtac 20

<210> 14
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<212> DNA
<213> Artificial

<220>
<223> Hybridization probe/primer

<400> 14
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<210> 15
<211> 22
<212> DNA
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<220>
<223> Hybridization probe/primer

<400> 15
gaccgctgta tgcgacattc cg 22

<210> 16
<211> 22
<212> DNA
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<220>
<223> Hybridization probe/primer

<400> 16
aactcaactg ccatccaaga gc 22

<210> 17
<211> 21
<212> DNA
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<220>
<223> Hybridization probe/primer

<400> 17
gctatgttcc gccgcaaagc g 21

<210> 18
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<212> DNA
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<220>
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<400> 18

acgagcacgg cattaagcct gatgg 25

<210> 19
<211> 25
<212> DNA
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<220>
<223> Hybridization probe/primer

<400> 19
ccatcaggct taatgccgtg ctcgt 25

<210> 20
<211> 25
<212> DNA
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<220>
<223> Hybridization probe/primer

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<210> 21
<211> 24
<212> DNA
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<220>
<223> Hybridization probe/primer

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<210> 22
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<210> 23
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<210> 24
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tgttccgagg acgaatgagc atgag 25

<210> 25
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<220>
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ctcatgctca ttcgtcctcg gaaca 25

<210> 26
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<210> 27
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<210> 28
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<400> 28
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<210> 29
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<213> Artificial

<220>
<223> Hybridization probe/primer

<400> 29
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<210> 30
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<400> 30
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<210> 31
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<400> 31
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<210> 32
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<210> 33
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ggttgaaaat acagacgaga ctta 24

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<210> 36
<211> 23
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<220>
<223> Hybridization probe/primer

<400> 36
caattggcca gggaagcgaa gac 23

<210> 37
<211> 23
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<220>
<223> Hybridization probe/primer

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